

3 20 degrees to 25 degrees from normal to align with a wall of the partially unfolded folded-box sleeve.

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REMARKS

Reconsideration of the issues raised in the above referenced Office Action is respectfully solicited.

The attached Information Disclosure Statement cites Great Britain Patent Publication No. 1 152 321. Applicants request consideration and initialing of Form PTO-1449.

The rejection of Claims 7 and 8 under 35 USC §112, second paragraph, has been considered. The objected to language in Claim 7, which has been incorporated into independent Claim 1, has been rewritten to provide proper antecedent basis for the second device. Therefore, withdrawal of the rejection is respectfully requested.

Applicants appreciate the lack of a rejection based on the applied prior art for Claims 7 and 8. Claims 6-8 have been incorporated into independent Claim 1. Therefore, allowance of independent Claim 1, and Claims 2-5 dependent therefrom, is respectfully requested.

Applicants believe that paragraph 6 of the Office Action may have been intended to reject Applicants' Claims 7 and 8 as being unpatentable over Roberto (U.S. Patent No. 5 562 581) in view of Dietrich (U.S. Patent No. 4 197 790) and further in view of Taddei (U.S. Patent No. 3 888 164). For purposes of discussion, we offer the following comments.

The disclosures of the combination of Roberto, Dietrich and Taddei do not teach Applicants' claimed invention. The applied prior art discloses immediately fully opening a folded-box sleeve. For example, column 6, lines 15-16 of Roberto discloses the roller 51 completely opening the case or box sleeve 2. Likewise, U.S. Patent No. 4 197 790 to Dietrich shows the carton or box 2 completely unfolded when placed at the entrance to the moving conveyor. Figures 5 and 6 of Taddei show fully opening the box sleeves before advancement along a conveyor.

Moreover, there is no motivation, absent Applicants' specification, to combine selected features of the applied prior art references to attempt to achieve the claimed invention. Roberto relies on a roller 51 to open the box sleeves during rotary movement about a device shaft 21. Dietrich discloses a single arm for receiving and unfolding boxes. Thus there is no motivation to simply choose the compressing section of Dietrich for the differently structured apparatus of Roberto having multiple arms.

The rejection states that Dietrich teaches it is old and well known to provide a box opening apparatus for the purpose of partially opening boxes. Figure 1 of Dietrich, however, shows the box being completely open before being placed on a belt for carrying into a chute. Thus, Roberto, Dietrich and Taddei do not teach removing a partially unfolded folded-box sleeve from a removing device and advancing the partially unfolded folded-box sleeve into a chute. As discussed above, Roberto and Dietrich both start out by completely unfolding the box sleeve.

Applicants' Claim 2 is rejected as being unpatentable over Roberto in view of Dietrich and further in view of Guttinger (U.S. Patent No. 5 910 078). As discussed above, the combination of Roberto, Dietrich and Taddei does not meet Applicants' invention of amended Claim 1. Applicants' Claim 2 further recites that "the removing device includes several arms having suction heads and the arms are movable by a drive and a planetary gearing along a cycloidal path". Guttinger discloses a rotary object feeder having suction cups moving along a hypocycloidal path. The object feeder can be utilized for moving cartons. Guttinger, however, does not disclose, teach or suggest a device that partially unfolds box sleeves and advances the box sleeves to a chute to an expansion chamber whereat the box sleeves are fully unfolded.

Further, there is no motivation to provide the rotary object feeder of Guttinger, for the feeding arrangement of Roberto which includes gripping means 18 having suction cups

19 that move a box sleeve past a roller 52 which opens the box thereon and advances the box to a packaging line. It is unclear how the feeder of Guttinger could move boxes along a path that includes a roller as in Roberto for opening the boxes fully.

At page 4, paragraph 6 of the Office Action, Claim 2 is also rejected as being unpatentable over Roberto in view of Dietrich and further in view of Taddei (U.S. Patent No. 3 888 164). Claim 2 is allowable for the reasons set forth above with respect to Claim 1. The Office Action states that Taddei discloses it is old to provide conveyers with opposing lugs moving at a similar velocity for the purpose of increasing manufacturing throughput. It is unclear to Applicants what Taddei has to do with the features of dependent Claim 2 which is drawn to a removing device including several arms having suction heads, the arms being movable by a drive in a planetary gearing.

Finally, with regard to Applicants' Claims 4 and 5, the Office Action indicates that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a lug with 20-25° incline, since it has been held that discovering an optimum value of a result effective value involves only routine skill in the art.

An angled lug surface is not disclosed or suggested in the applied prior art. The applied prior art utilizes lugs having perpendicular angles to the path so that a box is maintained fully open when contacted by the lugs or arranged between the lugs. This differs entirely from Applicants' lug having a lug surface angled 20-25° from perpendicular. Applicants' angle enables the box sleeves to remain partially opened as they advance along the path. This differs entirely from the prior art which immediately fully opens the folded box sleeves and then provides the fully open box sleeves to a packaging line. Providing angled lug surfaces other than perpendicular to the path of movement of the fully open box sleeves of the applied prior art would partially refold the

box sleeves and thus destroy the function of maintaining the box sleeves fully open. Therefore, one of ordinary skill in the art would not look to provide any angle from normal for a contact surface of any of the lugs disclosed therein.

For the above reasons, reconsideration and allowance of Claims 1-5 is respectfully requested.

Added Claims 9-13 further distinguish the applied prior art. Claim 9 recites a compressing section "to only partially unfold the folded-box sleeves, the compressing section comprising a curved slide surface", "a chute dimensioned to precisely receive the only partially unfolded boxes" and "an output device for removing the only partially unfolded box sleeves from the removing device and advancing the partially unfolded box sleeves from the chute", and "first and second rotating devices for receiving the only partially unfolded box sleeves and fully unfolding the partially unfolded box sleeves".

This combination of features is not present in or taught by the applied prior art. As discussed above, Roberto discloses the roller completely opening the case or box sleeve and Dietrich shows the carton or box completely unfolded when placed at the entrance to the moving conveyor. As set forth at paragraph 6 of Applicants' specification, by only partially unfolding the flat folded-box sleeves in the beginning, an increased speed for moving boxes through the device can be obtained.

Claim 10 is allowable for the reasons set forth above with respect to independent Claim 9.

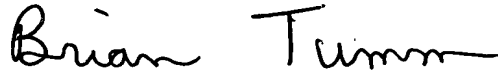
Method Claim 11, and Claims 12 and 13 dependent therefrom also distinguish the applied prior art. Claim 11 recites advancing an only partially unfolded folded-box sleeve through a number of steps before finally reaching an expansion chamber where the box sleeve is fully unfolded. As discussed above, the applied prior art discloses completely unfolding the folded-box sleeves before advancement along a conveyor.

For the above reasons, allowance of Claims 9-13 is respectfully requested.

Pursuant to 37 CFR §1.121, attached hereto are marked-up copies of the amendments to the claims.

Further and favorable reconsideration is respectfully solicited.

Respectfully submitted,



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Encl: Marked-up Claims 1-5  
Information Disclosure Statement  
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1. (Amended) A device for unfolding of folded boxes, comprising a magazine for receiving of flat folded-box sleeves, a removing device for ~~the~~ individual removal of the folded-box sleeves from the magazine and for feeding the folded-box sleeves to an unfolding device wherein the folded-box sleeves are partially unfolded along a compressing section, ~~wherein the unfolding device has including,~~ after the compressing section, a chute for ~~the precisely precise~~ fitting receipt of the partially unfolded folded-box sleeves, an output device for removing the partially unfolded-box sleeves from the chute, ~~and~~ an expansion chamber following the chute whereat the partially for receiving the fully unfolded folded-box sleeves are fully unfolded, and

first and second devices provided at the expansion chamber and operated at the same speed to hold the fully unfolded box sleeves at diagonally opposite edges and to forward the fully unfolded box sleeves.

2. (Amended) The device according to Claim 1, wherein the removing device has includes several arms ~~with a having~~ suction ~~headheads~~, and the arms ~~can be moved~~ are movable by a drive and a planetary gearing along a cycloidal path.

3. (Amended) The device according to Claim 1, wherein the compressing section is defined by a curved slide surface along which the folded-box sleeves ~~can be~~ are moved.

4. (Amended) The device according to Claim 1, wherein the output device has includes lugs, ~~each with~~ said lug having a lug surface configured to align with a sidewall of the partially unfolded folded-box sleeves.

5. (Amended) The device according to Claim 4, wherein an angle ( $\alpha$ ) in a range of 20 to 25 degrees is provided between each of the lug surfaces ~~surfaces~~ and a normal ~~to a~~

~~strand of the output device~~perpendicular to a path of travel  
of the partially unfolded folded-box sleeves in the chute.